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ABSTRACT

The Sales and Marketing Education organization of AT&T Communications conducts ongoing research to monitor the impact of their National Teletraining Network (NTN) programs for professional sales personnel on: (1) learning, (2) student acceptance of courses and instructors, and (3) student willingness to take additional teletrained programs. During 1984, comparisons were made between face-to-face courses and a teletrained delivery mode; no significant differences were found at the .05 level of significance between the two methods in either the course relevance and design or the quality of instruction categories. A short questionnaire was used to evaluate the effectiveness of the teletraining programs; 91.6% of the students who responded indicated they would participate in future teletraining courses. Cost benefit analysis substantiates the fact that teletraining is a cost-effective alternative to face-to-face delivery of training. Additional benefits include: the ability of the medium to reach remote, low density areas; the ability to add multiple locations to a training session; the flexibility to increase the number of students who can be reached at one time; the ability to quickly disseminate information to an entire sales force; and the ability to share limited instructor resources. It is pointed out that without the NTN, much of the current update training would not be attempted due to various constraints, e.g., the high cost of travel and travel time. Two data tables and two graphs are provided. (JB)

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RESEARCH ON TELETRAINING:

STUDENT ACCEPTANCE, LEARNING EFFECTIVENESS AND COST BENEFITS IN THE CORPORATE ENVIRONMENT

by

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INTRODUCTION

Previous research on teletraining has indicated that teletraining is a viable alternative delivery medium for short duration programs. Since 1981, AT&T has studied teletraining effectiveness for short continuing education programs and for multi-day courses. This paper highlights the 1984 research results and the benefits associated with using teletraining to deliver training to a nationwide audience.

BACKGROUND

The AT&T Communications National Teletraining Network was established to meet the needs of professional sales personnel located throughout the United States. Because of high costs associated with travel and travel time and the need to keep professional sales people up-to-date on the latest service information and technological developments, the National Teletraining Network was implemented.

In 1981, AT&T Communications began to offer professional sales courses to field locations via teletraining. These courses had duration which ranged from 2 days to 2 weeks. In October of 1983, the Sales and Marketing Education Division began to offer weekly one hour information updates to the field sales personnel throughout the United States. The program developed for teletraining delivery were topics that field sales managers had identified as high interest topics which were required to keep current in a competitive telecommunications environment.

In October of 1983, weekly programs were delivered to five cities, one from each AT&T Communications region. In November of 1983, five additional sites were added because of requests from field managers to include their cities on the National Teletraining Network. Since then the network grew steadily to a network of over 135 locations at the end of 1984.

The network today delivers weekly one hour programs and regularly scheduled teletrained courses which are periodically evaluated using a reaction level evaluation survey, course debriefings and cognitive pre and post tests. The number of programs and courses offered and the number of total participants who have attended National Teletraining Network programs grew steadily since the initiation of the project to over 21,000 by the end of 1984. Research studies were conducted to track effectiveness and trial new delivery techniques.

TELETRAINED RESEARCH

The Sales and Marketing Education organization has continually monitored the impact of teletraining on learning, on student acceptance of courses and instructors, and on student willingness to take additional teletrained programs. This section of the article reviews the research conducted during 1984.

Student Learning

Previous research conducted by Sales and Marketing Education has shown there is no significant difference between the amount students learn in classes that are teletrained and the amount learned in face-to-face classes. To continue with our ongoing research, comparative studies of test results are periodically conducted. The most recent study compared the test scores for students attending teletrained and face-to-face classes of the Telemarketing I course. The results for two classes are presented in Figure 1. The teletrained group performed slightly higher on the pre-test, but the difference between the two groups was not significant at the .05 level ($t=1.73$, $df=20$). On the post-test, the teletrained group's performance was significantly higher than the face-to-face group ($t=6.24$, $df=20$).

Student Acceptance of Courses and Instructors

All students attending courses at the AT&T Communications training centers complete a student reaction survey at the end of each class. The survey has two categories: course relevance and design, and quality of instruction. The last item in each category is used as a general index of student satisfaction. The items are: "Overall, I feel the course was effective." and "Overall I feel the instructor was effective." These two items were used to compare student acceptance of the face-to-face and teletrained courses.

During 1984, courses in the sales training curriculum were converted to teletrained delivery. As the transition was being made to a teletrained delivery mode, the courses continued to be taught face-to-face. Modifications were made in the design of the courses to adapt to the medium of teletraining; however, the course objectives and the instructors were the same for both the face-to-face and teletrained versions of the courses. During the study period, a total 329 students attended 45 face-to-face classes, and 590 students attended 32 teletrained classes.

Significance tests for large-sample means were used to compare the data for all face-to-face classes with the teletrained scores for the second half of 1984. The teletrained classes from July through December were used because the courses were progressively being converted to teletrained delivery during the first half of the year. The results of these analyses are shown in Figures 2 and 3. No significant differences at the .05 level of significance were found between the face-to-face and the teletrained classes on either the course relevance and design or the quality of instruction categories. This

research supports the conclusion that students do not perceive a difference in effectiveness between courses delivered in a teletrained delivery mode and those delivered in more traditional face-to-face classes.

Acceptance of National Teletraining Network Programs

A short questionnaire was used to evaluate the effectiveness of the one-hour teletraining programs offered to the sales force via the National Teletraining Network. The most important item on the questionnaire was: "I would participate in future teletraining courses." This item was measured on a five-point scale and was used as an indicator of student acceptance of these programs. Figure 4 shows the results on this item for the first three quarters of NTN programming. The percent agreement with the statement, as indicated by a rating of 4 or 5, was 88.7% in the fourth quarter of 1983, and rose to 91.6% in the second quarter of 1984. Similarly, the percent unwilling to participate in future programs declined from 1.5% to .8% respectively. Since the results were uniformly positive across the 5,530 students who participated in the programs, the use of the form was discontinued in the third quarter of 1984 to reduce administrative costs.

Student acceptance of the one-hour teletrained programs began high and increased with time. Today, these short programs are an integral part of the training delivery system. The teletraining seminars are a primary vehicle for introducing new applications and for keeping the field sales people up-to-date on important issues and services.

The research done at Sales and Marketing Education during 1984 focused on demonstrating that teletraining is an effective training medium as measured by student learning and acceptance. The results of the studies presented here strongly support the conclusion that teletraining is a viable instructional delivery mode.

COST BENEFITS OF TELETRAINING

The National Teletraining Network produced significant cost benefits for AT&T Communications in 1984. Major savings were realized for both the multiple-day courses and the one-hour seminar programs delivered via the NTN. The savings resulted from travel costs and productivity-related costs that were avoided by using the teletraining medium. The information presented here substantiates the fact that teletraining is a cost-effective alternative to face-to-face delivery of training.

Savings from Teletrained Courses

In computing the cost benefits for the courses delivered via teletraining, the assumption was made that students would have had to travel to Sales and Marketing Education in Cincinnati to received this training if teletraining were not an alternative. During 1984, 590 students attended teletrained sessions of courses in the sales training curriculum. An average round-trip airfare of $400 and a per diem of $90 per day for lodging and daily expenses resulted in a total cost avoidance per student of $670 per course. The average course length was 2.6 days. The total savings for 590 students was $395,300.

The cost avoidance from not traveling is offset somewhat by the line and bridge charges associated with teletraining. A typical teletrained course at Sales and Marketing Education had one "home site" and two remote sites. This configuration incurred charges for six lines (one audio and one audiographic for each location), and six ports on the bridge (two for each location). Bridging costs were based on the AT&T Communication's ALLIANCE* Teleconferencing Services. Equipment and other capital investments were not considered in these calculations since existing equipment was used; only operating expenses were included. Using these assumptions, the total network charges for the 57 teletrained sessions was $197,448. Subtracting these network teletraining charges from the cost avoidance figure produced a net savings of $197,852, or $335 per student.

Travel cost avoidance was only part of the actual savings realized from teletraining. Employee productivity savings needed to be factored into the computations; that is, the reemployment of non-productive time spend traveling, waiting in airports, and catching up once back at the home location. Assuming the average non-productive time was six hours per student, then the total lost-time expense for 590 students was $84,960, or $144 per student. Adding this savings to the earlier travel cost figure of $335 per student produced a total net cost avoidance of $479 per student.

This data supports the assertion that teletraining is clearly a cost-effective way to deliver courses. The benefits included both direct travel expense avoidance, and increased productivity resulting from reduced no productive time.

*A service mark of AT&T.

Savings from Programs

Similar calculations were performed to determine the cost avoidance for the programs presented via the Network. The following two assumptions were made in doing these calculations. First, students from the 130 field locations would not travel to the Sales and Marketing Education Center in Cincinnati to participate in a 60-minute training session; therefore, each presenter would have to travel to approximately 25 major sites to deliver the training. Second, students would utilize ground transportation from local or remote locations to attend a training session in one of the 25 locations.

If each presenter had traveled to 25 locations costs incurred would have been $90 for local expenses and $400 for airfare; the travel cost for each presenter would have been $12,250. For the 44 programs presented in 1984, the total cost avoided was $539,000.

The cost benefit analysis for the seminar programs also accounts for the costs associated with the operation of the National Teletraining Network. The cost of the long distance calls placed to Cincinnati by each of the remote locations was $83,028. These programs did not use any interactive graphic devices; therefore, only one telephone circuit was required for each remote location. Since a meet-me premises bridge located at Sales and Marketing Education was used, no additional bridging charges were incurred. The expenses incurred for the reproduction of visuals used for the programs during 1984 was $38,754. The total cost avoidance for the 1984 National Teletraining Network programs was $417,218, a net savings of $9,482 per program.

The cost-benefit calculations indicate that the National Teletraining Network is a cost effective method for providing update training for AT&T Communications. Benefits of the NTN in addition to cost-effectiveness include: the ability of this medium to reach remote, low density locations which are too difficult and time consuming to reach through conventional travel arrangements; the ability to add multiple locations to a training session when needed; the flexibility to increase the number of students who can be reached at one time; the ability to quickly disseminate information to an entire sales force; and the ability to share limited instructor resources. Without the NTN, much of the current update training would not be attempted due to various constraints. Perhaps the chief benefit of the National Teletraining Network's programs is that it provides training to field sales people, where they need it and when they need it to remain current in a competitive environment.

CONCLUSION

The National Teletraining Network has had a positive impact on the field sales force within AT&T Communications in three major areas. First, sales professionals have had an opportunity to keep current and to increase their knowledge base of products and services in a very timely manner. Studies conducted within AT&T Communications have shown that teletraining is a viable means of learning technical information and sales skills. Second, student acceptance of the National Teletraining Network's programs and the teletrained courses has been outstanding. Students indicate that teletraining is a viable medium for delivering content which addresses sales skills and technical information. Third, the National Teletraining Network's weekly programs and teletrained courses have been proven as very cost-effective alternatives to traditional delivery channels for professional sales and marketing education.

FIGURE 1

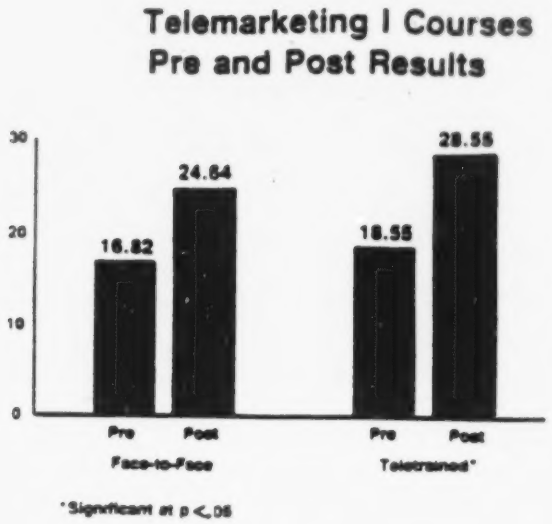


FIGURE 2

STUDENT ACCEPTANCE OF COURSES

	Teletrained*	Face-to-Face**
Sessions	32	45
Mean	4.03	4.18
Standard Deviation	.42	.42

No significant difference
(z=1.52, df=75, p=.06)

* July - December 1984

** All of 1984

FIGURE 3

STUDENT ACCEPTANCE OF INSTRUCTORS

	Teletrained*	Face-to-Face**
Sessions	32	43
Mean	4.54	4.57
Standard Deviation	.27	.31

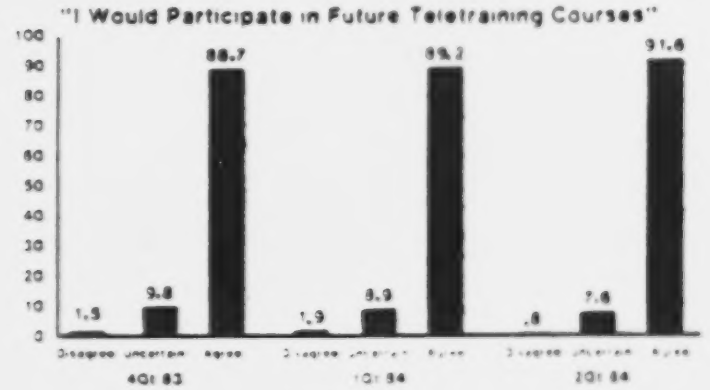
No significant difference
($z = .45$, $df = 75$, $p = .33$)

* July - December, 1984

** = All of 1984

FIGURE 4

STUDENT ACCEPTANCE OF NATIONAL TELETRAINING NETWORK PROGRAMS



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